# **GESTAMP, SAFETY ABOVE ALL**



## **GESTAMP'S COMMITMENT TO SAFETY**

Gestamp, as a multinational specialized in the design, development and manufacture of highly technological components for vehicles, understands sustainability as a balance between economic growth, social development, and proper management of its environmental footprint. In that sense, Gestamp, since the beginning of its history, is committed to the improvement of people's quality of life. It's a responsibility the company acquired when it was born and that it is constantly faced thanks to its talent, operational excellence and technology and innovation capabilities.

With that aim, Gestamp co-creates the technology and solutions that enable the mobility of today and tomorrow. Gestamp is no other thing than a travel companion that ensure the safety of vehicle occupants, and road users, every kilometer.

## **GLOBAL REGULATION CONTEXT AND NEW CAR ASSESMENT PROGRAMS (NCAPS)**

The automotive industry has always had a global net scope. An economic key sector, where technology and employment have much to say, and that it's crucial for people's life. Because mobility is an enabler in many aspects. Something that happens inside and outside cities, for tourism or professional matters... It's just about connecting, about being closer. It's a matter of quality of life.

But safety on the road is also an important social problem. In 2024, 19,940 people died in the European Union on a road accident, a 2% less than the year before. Step by step the total amount of deaths per year in Europe has been reduced, on one hand

The automotive industry has always had a global net scope. thanks to regulatory policies and, on the other, the investment on research, innovation and technology made by all the automotive value chain.

Homologation processes have been deployed by regions so that to sell worldwide a vehicle it must be evaluated by many and complex crashregulations.

European Union is one player in the middle of a global context, where United States, China and emerging countries have their own realities and challenges. Each one in their own context, with sinistrality due to different causes. But in all of them, the same fact: vehicle accidents are one of the main death external causes. And, in all of them, a common objective of reducing sinistrality materialized in different ways: prevention initiatives in China or a zero-death plan in US to eliminate all traffic fatalities by a set date. And, apart from that, homologation processes have been deployed by regions so that to sell worldwide a vehicle it must be evaluated by many and complex crashregulations.

Apart from that, it must be considered that New Car Assessment Programs (NCAP) have been deployed by regions to inform publicly the consumers about the safety characteristics of vehicles. These evaluating programs for new vehicles, which are based on crash tests and assistance systems, are becoming more demanding each day. Therefore, Gestamp is a key technological partner for the manufacturers, as the company develops crucial structural components for safety. Always one step ahead.

In conclusion, safety is its commitment. In the 24 countries where the multinational has presence, Gestamp joins the efforts of all the social actors towards a safer mobility and promotes it as a mean of progress.



## **HOW GESTAMP CONTRIBUTES TO SAFETY?**

Gestamp works every day to achieve an increasingly safer mobility, focusing on identifying formulas that lead to greater safety both for the occupants of the vehicle and other road users.

Its innovative components are focused on contributing to the prevention of any accident, road safety and efficient driving, offering its bestin-class engineering solutions globally.

Its innovative components are focused on contributing to prevention, road safety and efficient driving

Currently, within the new mobility era we are living through, Gestamp contributes to safety in any given accident that may occur with all these propulsion systems which are on the road:

### INTERNAL COMBUSTION **ENGINE (ICE)**



### **HYBRID ELECTRICAL** (HEV)



### **PLUG-IN HYBRID ELECTRICAL (PHEV)**





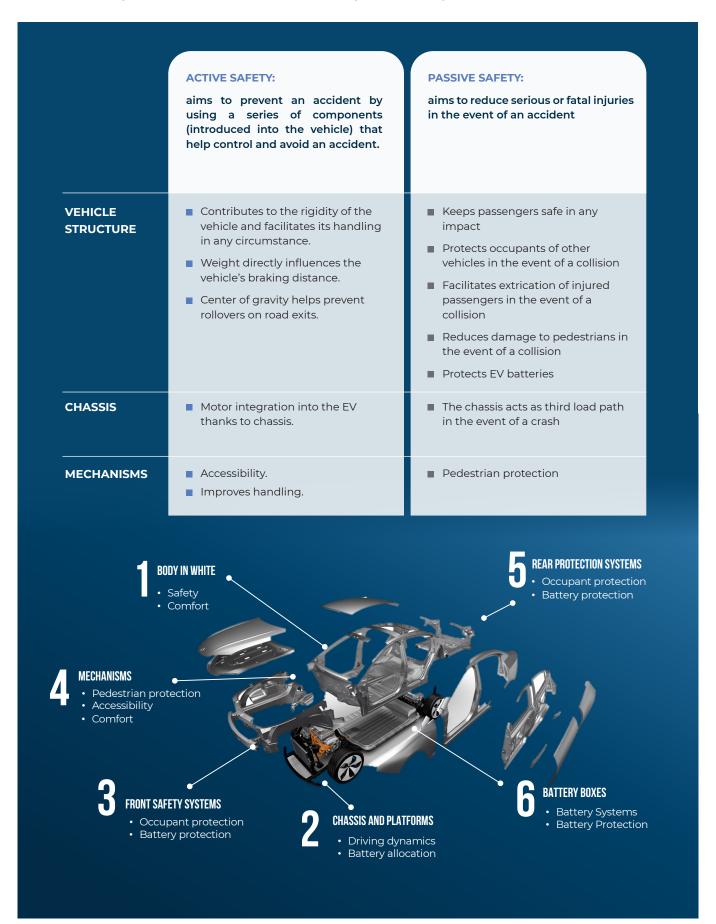
**ELECTRICAL VEHICLE** (BEV)



RANGE EXTENDED ELECTRICAL **VEHICLE (REEV)** 



In fact, Gestamp contributes to BOTH active and passive safety THANKS to its innovations in:



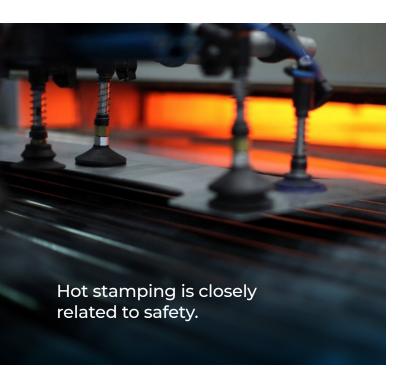


## INNOVATION IN PROPRIETARY TECHNOLOGIES AND PRODUCTS

Gestamp protects people on the road thanks to innovation in technologies that enable the best products with the best material for each case. These three areas of innovation are key to ensuring safetv:

## TECHNOLOGIES: HOT STAMPING AND STATE OF THE ART TECHNOLOGIES

Hot stamping is Gestamp's key technology, closely related to safety. It is a process for manufacturing structural body components that allows a lightweight design with ultra-high-strength steel and, above all, the best performance in the event of an accident.

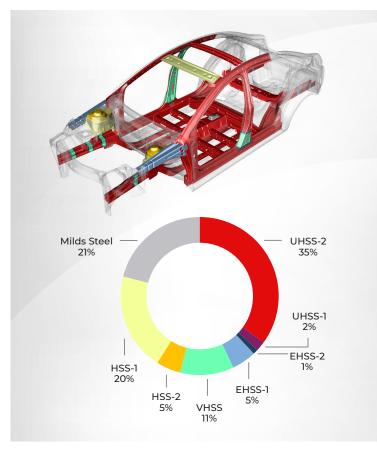


The mechanical properties of these hot-stamped structural parts allow proper absorption of energy in the event of an impact, maintaining the integrity of the safety cell and contributing to saving lives.

Gestamp is innovating in new versions of the process and new materials, such as ductile materials, to enhance performance by improving energy absorption and flexibility in targeted areas. This allows controlled deformation, improving passenger safety.



In fact, material selection for each component is based on energy absorption needs and resistance in different vehicle areas: right material in the right place (performance, weight, sustainability and cost).



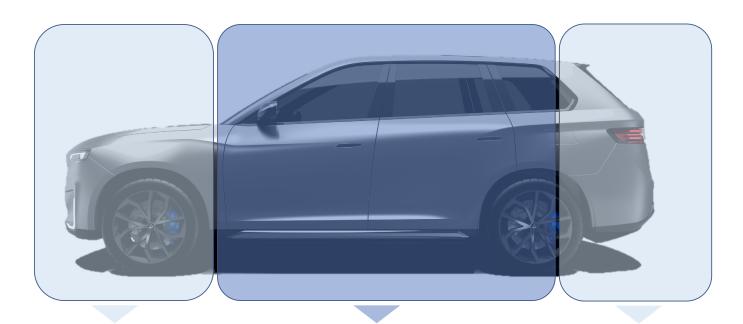
Besides, Gestamp constantly innovates in a toolbox of cutting-edge technologies that boost performance when combined with proper design and material selection. For example, new joining technologies, such as G-Weld, improve the behavior and strength of the part in the event of an impact, thanks to the geometry of the laser joining point.



### INNOVATION FOR THE SAFEST AUTOMOTIVE COMPONENTS IN THE NEW EV ERA

#### **VEHICLE STRUCTURE**

The vehicle structure has a crucial role in safety:



### **DEFORMABLE ZONE**

Absorb impact energy Reduce deceleration for occupants.

Works in combination with other elements.

#### **NON-DEFORMABLE ZONE**

Prevent intrusions into the passenger compartment.

Avoid occupants being trapped.

Works in combination with other elements

#### **DEFORMABLE ZONE**

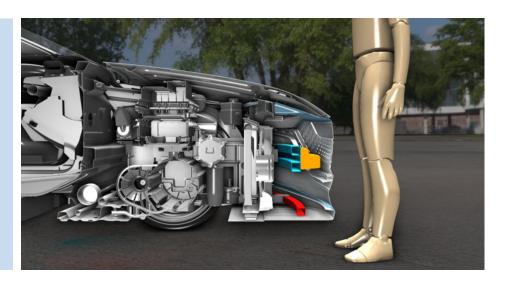
Absorb impact energy.

Protect fuel tank/ battery.

- igvee It contributes to the rigidity of the vehicle and enables safe driving under all circumstances.
- The weight of the vehicle directly influences the required braking distance: the heavier the vehicle, the longer the distance needed to brake.
- A low center of gravity prevents rollovers when leaving the road.
- I has to facilitate the extrication of injured passengers in the event of a collision.
- 🕢 The structure must minimize damage to pedestrians in the event of a crash; therefore, the "hard" parts of the front must be kept away from direct impact.



Today, the vehicle structure has an additional fundamental role: protecting EV batteries. In fact, the battery has changed the design of the structure because it is located in the floor space.



VEHICLE STRUCTURE AS AN ELEMENT OF **PASSIVE SAFETY** 



1 + 3

New materials with very high strength and high energy absorption.

Use of ultra-high-strength materials to increase safety.

1 + 2 + 3

Innovation in new products to address new mobility challenges:

- · Electric vehicles (Urban, long range)
- · Large SUV's.
- · Autonomous driving

Gestamp has innovated its product portfolio to offer the best safety solutions in this new electrified era. The Ges-Gigastampings® product family is the perfect example: large components manufactured in a single piece through hot stamping.

This major evolution allows Gestamp to apply cutting-edge technologies and techniques, delivering a competitive solution in terms of weight and, above all, safety—ensuring excellent integrity of the safety cell in any crash scenario.



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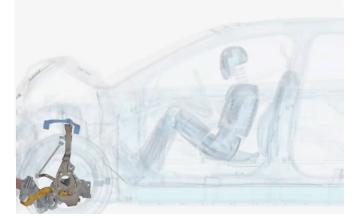
#### **CHASSIS**

The vehicle's chassis is a key component within the overall active and passive safety systems. This is especially true for new EVs, where chassis developments play a critical role:

The wheelbase of the car is widened to provide more space for the battery and occupants.

**GRAND EV FRONT SUBFRAME** SMALL ICE FRONT SUBFRAME INTEGRATED ELECTRIC **ENGINE AND CRASH FUNCTION** FRONT SUBFRAME FRONT SUBFRAME VS. INTERNAL COMBUSTION **ELECTRIC VEHICLE ENGINE VEHICLE** 

In addition, the chassis contributes during a crashas a new force load path, dissipating energy while deforming.



#### **MECHANISMS**

Although they are not part of the vehicle's structure, some mechanisms play an essential role in minimizing the consequences of an accident. Thanks to the clearance between the hood and the engine, the impact force to the head is reduced.

One example is the active hood hinge, which quickly rises at the hinges to create a buffer zone in the event of an impact between a vehicle and a pedestrian.

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## **GESTAMP, SAFETY ABOVE ALL**

At Gestamp, all our products follow one guiding principle: safety above all else. From their conception and development to the materials selected and the technologies used to manufacture them, everything is designed for the protection and comfort of drivers, passengers and other road users.

### G-LAB

Gestampputtechnologyattheserviceofsafetywith a pioneering simulation tool: G-Lab (Gestamp's Virtual Laboratory for Automotive Product Validation), one of its leading R&D projects. With this family of virtual cars, the company analyzes the behavior of vehicle components and technologies in the event of any type of crash or impact scenario across all vehicle segments. Gestamp studies all key safety indicators to ensure the best results.

In this way, Gestamp goes always one step further in validating new automotive products and solutions.

Gestamp put technology at the service of safety with a pioneering simulation tool: G-Lab (Gestamp's Virtual Laboratory for Automotive Product Validation).

